

## 雲南山毛櫟科補誌, 二

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### ADDITIONAL NOTES ON THE FAGACEAE OF YUNNAN, II

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#### 硯山錐栗 *Castanopsis yanshanensis*, 新種。

常綠喬木, 高至十公尺, 小枝圓柱狀, 有條紋, 暗褐色, 無毛, 密被有多數微小圓形白色皮孔, 葉革質, 不等邊矩圓形至卵圓披針形, 頂端尾狀漸尖至鐮形尾狀漸尖, 基部斜闊楔形至斜幾圓形, 上部有稀疏具尖頭鋸齒或全緣向外微卷, 無毛, 上面光綠色, 下面帶褐色, 長五至九公分, 闊一·八至三·二公分; 中脈細瘦, 兩面均凸起; 側脈十對, 互生或幾對生, 細瘦, 近邊緣處彎曲與環結, 成六十至七十度角, 兩面均可見; 小脈成密網狀; 葉柄無毛, 長一公分。穗狀果序長至十二公分, 序軸粗壯, 圓柱狀, 暗褐色, 密被微小皮孔, 無毛; 未成熟總苞有灰色茸毛, 成熟後扁闊幾球形, 頂端二裂, 高一·五公分, 闊三公分, 有褐色細茸毛, 壁木質, 厚二公厘, 被有成不規則帶狀稀疏之刺; 刺粗壯, 基部連合, 扁平, 頂端尖銳, 基部有細茸毛長三公厘。果每總苞有三個, 幾圓形, 高十二公厘, 闊十八公厘, 栗褐色, 有絲狀毛, 頂端有尖頭; 基部疤痕大, 凸出, 闊十八公厘。

雲南東南部: 硯山縣, 高一千二百公尺處, 稀疏槲櫟林中, 喬木高五公尺, 常見, 王啓無 84116 號 (模式標本), 一九三九年十月十六日; 硯山縣, 高一千二百公尺處, 在散見林木中, 喬木高十公尺, 果可食; 王啓無 85155 號, 一九三九年十月二日; 硯山縣, 高一千二百公尺處, 疎散林木中, 葉下部帶褐色, 果味甜, 可食; 王啓無 84711 號, 一九三九年十月二十七日。

此種與 *Castanopsis tenuinervis* A. Camus 相近似, 不同處在長尾狀之葉與較大之總苞與果。

#### *Castanopsis yanshanensis*, sp. nov.

Arbor sempervirens 10 m. alta; ramuli teretes, striati, atrobrunnei, glabri, lenticellis numerosis minutis rotundatis albis dense obtecti. Folia coriacea inaequaliter oblonga vel ovato-lanceolata, apice caudato-vel falcato-caudato-acuminata, basi oblique late cuneata vel oblique subrotundata, parte superiora remote mucronato-serrata vel integra et leviter revoluta, glabra, supra laete viridia, subtus leviter brunnea, 5-9 cm. longa, 1.8-3.2 cm. lata; costa media gracilis, utrinque elevata; nervis lateralibus utrinsecus 10-jugis,

alternatis vel suboppositis, gracilibus, ad marginem arcuatis et anastomosantibus, sub angulo  $60^{\circ}$ - $70^{\circ}$  divergentibus, utrinque conspicuis, nervuli dense reticulati; petioli glabri, 1 cm. longi. Spica fructifera ad 12 cm. longa, rhachidibus robustis, teretibus, atrobrunneis, lenticellis minutis dense obtectis, glabris. Involucra immatura cinereo-tomentosa, matura depresso late subglobosa, apice 2-lobata; 1.5 cm. alta, 3 cm. lata, brunneo-tomentellata; muro ligneo, 2 mm. crasso, spinis irregulariter zonatibus sparse obtecto; spinis robustis, ad basin connatis, complanatis, apice pungentibus, basi tomentellatis, 3 mm. longis. Fructus in quoque involucro 3, subglobosus, 12 mm. alti, 18 mm. lati, castaneo-brunnei, sericeo-pilosi, apice apiculati; cicatrice basilari magna, convexa, 18 mm. lata.

Southeastern Yunnan: Yanshan Hsien, Shui-tou-dzai, alt. 1200 m., open oak woods, small tree 5 m. high, frequent, C. W. Wang no. 84116 (type), Oct. 16, 1939; Yanshan Hsien, To-hou-tsai, alt. 1200 m., in scattered woods, tree 10 m., 25 cm. in diam., fruit edible; C. W. Wang no. 85155, Oct. 2, 1939; Yanshan Hsien, Pie Shih-eih, alt. 1200 m., open woods, leaf brownish beneath, fruit edible, sweet; C. W. Wang no. 84711, Oct. 27, 1939.

This species is related to *Castanopsis tenuinervis* A. Camus, differing in long caudate-acuminate leaves and larger involucre and fruits.

### 緬寧鐵栗 *Castanopsis mianningensis*, 新種。

常綠喬木高四至五公尺;小枝圓柱狀,有條紋,紅褐色,被有多數微小白色長形皮孔。葉革質,矩圓形,頂端驟然尾狀漸尖至鐮形尾狀漸尖,基部微不等幾圓形,上部有稀疏小齒,無毛,上面光綠色,下面色較淡,長七·五至九·五公分,闊三·五至四·五公分;中脈兩面均凸起;側脈十至十二,細瘦,互生或幾對生,近邊緣處彎曲與環結,成六十至七十度角,小脈成密網狀;葉柄扁平,長一公分,無毛。果序長九公分,序柄與序軸圓柱形,無毛。總苞單生,幾圓形,頂端微二裂,高三公分,闊三·五公分;壁木質,厚三公厘,幾密被成不規則帶狀之刺;刺頗粗壯,外彎,尖銳,長四公厘,基部連合成一總軸長三公厘;幼果每總苞有三個闊圓錐卵形,紅栗褐色,有黃色絲狀茸毛,頂端有長尖,高一·五公分,闊一·七公分,基部疤痕幾三角形,闊一·三公分。

雲南南部:緬寧縣,高二千六百五十公尺處,森林中,喬木高四至五公尺,常見;俞德浚 17910 號(模式標本),一九三八年十月五日。

此種與 *Castanopsis tenuinervis* A. Camus 相近,不同處在其較大之葉與較大之總苞與果。其與 *C. yanshanensis* Hu 不同處在其矩圓形之葉,與總苞壁被有較密之刺基部連合成一總軸長三公厘。

### *Castanopsis mianningensis*, sp. nov.

Arbor sempervirens, 4-5 m. alta; ramuli teretes, striati, rufo-brunnei, lenticellis numerosis minutis albis elongatis obtecti. Folia coriacea, oblonga, apice abrupte caudato-acuminata vel falcato-caudato-acuminata, basi leviter inaequaliter subrotundata, ad partem superiorem remote denticulata, glabra, supra laete viridia, subtus pallidiora, 7.5-9.5 cm. longa, 3.5-4.5 cm. lata; costa media utrinque elevata; nervis lateralibus 10-12, graciles, alternatis vel suboppositis, ad marginem arcuatis et anastomosantibus, sub angulo  $60^{\circ}$ - $70^{\circ}$  divergentibus, nervulis dense reticulatis; petioli complanati, 1 cm. longi, glabri. Spica fructifera 9 cm. longa, pedunculo rhachique teretes, glabri. Involucra solitaria, subglobosa,

apice sub-2-lobata, 3 cm. alta, 3.5 cm. lata; muro ligneo, 3 mm. crasso, spinis irregulariter zonatibus subdense obiecti; spinis satis robustis, recurvatis, pungentibus, 4 mm. longis, basi in truncum communem 3 mm. longum connatis; fructus juveniles in quoque involucrio 3, late conico-ovoidei, rufo-castaneo-brunnei, fulvo-sericeo-pilosi, apice longe apiculati, 1.5 cm. alti, 1.7 cm. lati, cicatrice basilari subtriangulari, 1.3 cm. lata.

Southern Yunnan: Mianning, Poshang, alt. 2650 m., among forest, tree 4-5 m., common; T. T. Yü no. 17910 (type), Oct. 5, 1938.

This species is closely related to *Castanopsis tenuinervis* A. Camus, differing in larger leaves and larger involucries and nuts. From *C. yanshanensis* Hu it differs in oblong leaves and involucrial walls more densely covered with spines connate into a common trunk 3 mm. long.

### 龍陵櫸 *Quercus lunglingensis* Hu, 新種。

常綠喬木；小枝頗壯，橙紅褐色，有稀疏毛，有高起幾圓形皮孔。芽小，卵狀，頂端鈍，鱗片多數，覆瓦狀排列，卵形，有細茸毛，邊緣有纖毛。葉薄革質，橢圓形，窄短圓形至卵圓披針形，基部不等幾圓形至楔形，頂端尾狀漸尖，邊緣有粗大有芒齒牙狀鋸齒，上面亮綠色幾無毛，下面淡綠色，有黃色細茸毛，長八·五至十三公分，闊二·五至四·五公分；中脈與側脈在兩面均凸起，側脈十二至十三對，直至微彎，由齒引伸成芒長至七公厘，成  $30^{\circ}$  至  $45^{\circ}$  角，小葉脈極細，密生，在兩面均凸起；葉柄細瘦，有細茸毛，長至四公分。幼果斗單生，有粗壯短柄，苞片多數，覆瓦狀排列，頂端向內彎，外面有灰色茸毛，果未見。

雲南西部：龍陵縣，紅木樹，高二千四百公尺處，生山坡上疎生雜木林中，喬木，王啓無 90064 號（模式標本），一九四一年八月。

此種與他種不同處在其葉粗齒牙狀有長芒的鋸齒，及側脈在兩面均凸起而成  $30^{\circ}$  至  $45^{\circ}$  角。

### *Quercus lunglingensis* Hu, sp. nov.

Arbor sempervirens; ramuli valde robusti, aurantiaco-brunnei, sparsim pilosi, lenticellis elevatis subrotundati instructi. Gemmae parvae, ovoideae, obtusae, perulis pluribus imbricatis ovatis tomentellatis margine ciliatis cinctae. Folia tenuiter coriacea, elliptica, anguste oblonga vel ovato-lanceolata, basi inaequaliter subrotundata ad cuneata, apice caudato-acuminata, margine grosse setoso-dentato-serrata, supra nitido-viridia et glabrescentia, subtus pallide viridia et fulvo-tomentallata, 8.5-13 cm. longa, 2.5-4.5 cm. lata; costa media et nervis lateralibus utrinque elevatis, nervis lateralibus utrinsecus 12-13-jugis, rectis vel leviter curvatis in dentes inductis, setis ad 7 mm. longis, sub angulo  $30^{\circ}$ - $45^{\circ}$  divergentibus, nervulis tenuissimis, confertis, utrinque elevatis; petioli graciles, tomentellati, ad 4 cm. longi. Cupulae juveniles solitariae, pedunculis brevibus validis, squamis pluribus imbricatis apice incurvis, extus cinereo-tomentosis. Glans ignota.

Western Yunnan: Lungling Hsien, Hungmushu, alt. 2400 m., in open woods on slope, tree, C. W. Wang no. 90046 (type), Aug. 1941.

This species differs from others in the leaves being coarsely long setose-dentate-serrate along the margins and with lateral veins elevated on both surfaces and divergent at  $30^{\circ}$ - $45^{\circ}$ .

**麻栗坡櫟 *Quercus marlipoensis* Hu, 新種。**

常綠喬木，高至十八公尺，樹幹直徑三十公分；小枝粗壯，圓柱形，有黃色細茸毛，有多數高起橢圓形小皮孔。芽橢圓狀，頂端尖，鱗片多數，覆瓦狀排列，有茸毛。葉革質，矩圓形至倒卵矩圓形，頂端短漸尖，基部不等圓形，全緣向外微卷，上面亮綠色幾無毛，下面沿中脈與側脈密生茸毛，在側脈腋間有鬚狀毛，長至二十二公分，闊十一公分；中脈在上面微凸起，在下面極粗壯；側脈二十一對，上面微凸起，在下面顯著凸起，互生至幾對生，近邊緣處常分叉并環結，成四十五至六十度角；葉柄粗壯，有茸毛，長三公分。皂斗半球形，直徑十四公厘，苞片覆瓦狀排列，頂端鈍或尖，下部密生茸毛，上部幾無毛。堅果未知。

雲南東南部：麻栗坡，黃金營，海拔高一千一百公尺，生於常綠混生林，大喬木高十八公尺，直徑三十公分，王啓無 86357 號（模式標本）一九四〇年一月二十二日。

此種與他種不同處在其大革質矩圓至倒卵短圓形葉，葉全緣，側脈相距頗遠，常自下部或上部分叉。

***Quercus marlipoensis* Hu et Cheng, sp. nov.**

Arbor sempervirens 18 m. alta, trunco 30 cm. in diametro; ramuli robusti, teretes, fulvo-tomentellati, lenticellis pluribus parvis elevatis rotundatis ellipticis instructi. Gemmae ellipsoideae, acutae, perulis pluribus imbricatis tomentosius cinctae. Folia coriacea, oblonga vel obovato-oblonga, apice breviter acuminata, basi inaequaliter rotundata, margine integra et leviter revoluta, supra nitido-viridia et glabrescentia, subtus in costa media et nervis lateralibus dense tomentosa et in axillis nervorum barbata, ad 22 cm. longa, 11 cm. lata; costa media supra leviter elevata, subtus validissima; nervis lateralibus utrinsecus 21-jugis, supra leviter elevatis, subtus prominentibus, alternatis vel suboppositis, ad marginem saepe furcatis et anastomosantibus, sub angulo 45°-60° divergentibus; petioli validi, tomentosi, ad 3 cm. longi. Cupulae semi-globosae, 14 mm. in diametro, squamis imbricatis, obtusis vel acutis, inferne dense tomentosis, superne glabrescentibus. Glans ignota.

Southeastern Yunnan: Marlipo, Hwanginyin, alt. 1100 m., in evergreen mixed woods, large massive tree 18 m. high, 30 cm. in diam., C. W. Wang no. 86357 (type), Jan. 22, 1940.

This species differs from others in the large coriaceous oblong to obovate-oblong leaves entire along the margins and with distant lateral veins often forking from near the base or on the upper part.

**王氏櫟 *Quercus Wangii* Hu et Cheng, 新種。**

常綠喬木，高二十七公尺；枝甚粗壯，開張，灰褐色，有細茸毛；小枝粗壯，圓柱狀，密生黃色茸毛，葉皮紙質，倒卵形，頂端短驟尖，基部楔形，邊緣有粗齒狀鋸齒，兩面均微有毛，長二十七至三十三公分，闊九至十二公分；中脈在上面凹陷，在下面隆起；側脈二十五至二十八對，互生至幾對生，直或微彎導入齒，成四十五至六十度角，小脈甚細，在兩面均可見，葉柄粗壯，有黃色茸毛，長至三公分。皂斗碟狀，厚，木質，直徑五·五公分，苞片多數，闊三角形，頂端長尾狀漸尖，密生黃灰色茸毛；堅果大，扁球形，頂端凹陷有突起，部分有黃色茸毛，亮栗褐色，高二公分，直徑五公分，疤痕凸出，直徑四·五公分。

雲南東南部：屏邊縣，馬鹿塘，海拔高一千三百公尺，大樹高達二十七公尺，有粗壯開張

之枝，果生於最高枝上，在開闊淺山谷中偶見之；王啓無 83109 號（模式標本），一九三九年十一月。

此特殊種與其他種不同處，在其基大倒卵形之葉與其甚大扁形皂斗與堅果。

***Quercus Wangii* Hu et Cheng, sp. nov.**

Arbor sempervirens, 27 m. alta; rami valde robusti, patenties, griseolo-brunnei, tomentellati; ramuli robusti, æretes, dense fulvo-tomentosi, lenticellis pluribus satis magnis albis ellipticis instructi. Folia chartacea, obovata, apice breviter cuspidato-acuminata, basi cuneata, margine grosse dentato-serrata, utrinque sparsim pilosa, 27-33 cm. longa, 9-12 cm. lata; costa media supra impressa, subtus prominente; nervis lateralibus utrinsecus 25-28-jugis, alternatis vel suboppositis, rectis vel leviter arcuatis in dentes inductis, sub angulo  $45^{\circ}$ - $60^{\circ}$  divergentibus, nervulis tenuibus, utrinque conspicuis; petioli validi, fulvo-tomentosi, ad 3 cm. longi. Cupula scutelliformis, crassa, lignea, 5.5 cm. in diametro, squamis pluribus, late triangularibus, longe caudato-acuminatis, dense fulvo-cinereo-tomentosis. Glans magna, depresso-globosa, apice depressa et umbonata, partim fulvo-tomentosa, nitide castaneo-brunnea, 2 cm. alta, 5 cm. in diametro, cicatrice convexa, 4.5 cm. in diametro.

Southeastern Yunnan: Pingpien Hsien, Malutang, alt. 1300 m., giant tree to 27 m. high, with massive spreading branches, fruits borne on highest branches only, locally occasional in open shallow valley, C. W. Wang, no. 83109 (type), Nov. 1939.

This unique species is characterized by and differs from all other species in the very large obovate leaves and very large flattened cupules and nuts.

**富寧櫸 *Quercus fooningensis* Hu et Cheng, 新種。**

小喬木高至八公尺；小枝圓柱狀，有條紋，石灰白色，被有頗大長形高出皮孔，無毛。葉革質，卵形至闊短圓形，頂端微尖或圓，基部微心臟形或圓形，邊緣除下部外有腺狀鋸齒，微外卷，上面亮綠色，無毛，下面無毛，長二至三公分，闊一·二至二·二公分；中脈在兩面均凸起；側脈七對，互生或幾對生，弓彎，成四十五至七十度角，小脈成密網狀；葉柄長二三公厘，無毛。小蕊花序下垂，長二公分，花序軸有茸毛，花序柄長五公厘，密生灰色茸毛。花單生，花柄長幾一公厘，花被裂片闊卵圓形，長一·五公厘，膜質，外面有軟毛，邊緣有纖毛；小蕊長約花被裂片之二倍。

雲南南部：富寧縣，海拔高一千一百尺，生小石山上，喬木高八公尺，偶見，王啓無 89142 號（模式標本），一九四〇年五月一日。

***Quercus fooningensis* Hu et Cheng, sp. nov.**

Arbor parva, 8 m. alta; ramuli teretes, striati, calcei, lenticellis satis magnis elongatis elevatis glabris instructi. Folia coriacea, ovata ad late oblonga, basi subacuta ad rotundata, basi rotundata ad subcordata, margine parte inferiore excepta obscure glanduloso-serrata et in marginibus leviter recurvata, supra nitide viridia et glabra, subtus glabra, 2-3 cm. longa, 1.2-2.2 cm. lata; costa media utrinque elevata; nervis lateralibus 7-jugis, alternatis vel suboppositis, camptodromis, sub angulo  $45^{\circ}$ - $70^{\circ}$  divergentibus nervulis subtus confertim reticulatis; petioli 2-3 mm. longi, glabri. Inflorescentia staminata pendula, ad 2 cm. longa, rhachidibus tomentosis et pedunculis ad 5 mm. longis

dense cinereo-tomentosis. Flores singulares, pedicellis prope 1 mm. longis, lobis perianthii late ovatis, 1.5 mm. longis, membranaceis, extus pilosis, marginibus ciliatis; stamina lobis perianthii duplo longiora.

Southern Yunnan: Fooning Hsien, Lungmai, alt. 1100 m., on rocky hill, tree 8 m. high, occasional, *C. W. Wang no. 89142* (type), May 1, 1940.

This species is closely related to *Q. pseudosemicarpifolia* A. Camus, differing in smaller leaves obscurely glandulose-serrate along the margins, and in midrib and lateral veins less pronounced beneath.

### 楊梅葉櫟 *Quercus myricifolia* Hu et Cheng, 新種。

小喬木高八公尺；小枝頗壯，圓柱形，灰褐色，幾無毛，葉革質，矩圓倒卵形，矩圓形至橢圓矩圓形，頂端微鈍，基部楔形至幾圓形，邊緣除下部外有疏遠芒尖小鋸齒，向外微卷，上面亮綠色，除上面沿中脈有星芒狀毛外無毛，下面綠色，幾無毛；中脈在兩面均凸起；側脈八至九對，互生或幾對生，直而至邊緣微彎引入齒，在兩面均凸起，成六十度角；小脈極細，密集，兩面均可見；葉柄短長二·五至四公分。小蕊花序下垂，長至三·五公分，花序軸極細，有灰色星芒狀茸毛，花序柄長至七公厘，花單生，幾無柄，花被裂片闊；卵形，長一·五公厘，膜質，外面有毛，邊緣有纖毛，小蕊較花被裂片長約兩倍。

雲南南部：富寧，龍邁，海拔高一千公尺，生石山上叢莽中，小喬木高八公尺；王啓無 89116 號（模式標本），一九四〇年五月三日。

### *Quercus myricifolia* Hu et Cheng, sp. nov.

Arbor parva, 8 m. alta; ramuli satis validi, teretes, cinereo-brunnei, glabrescentes. Folia coriacea, oblonge-obovata, oblonga vel elliptico-oblonga, apice obtuscula, basi cuneata vel subrotundata, margine parte inferiore excepte remote mucronulato-denticulata et leviter revoluta, supra nitide viridia, ad costam mediam stellato-pilosam excepte glabra, subtus viridia, glabrescentes; costa media utrinque elevata; nervis lateralibus 8-9, alternatis vel suboppositis, rectis et ad marginem leviter arcuatis et dentes inductis, utrinque elevatis, sub angulo 60° divergentibus; nervulis tenuissimis, confertis, utrinque distinctis; petioli plani, 2.5-4 mm. longi. Inflorescentia staminata pendula, ad 3.5 cm. longa, rhachi gracillimi, cinereo-stellato-tomentosi, pedunculis ad 7 mm. longis. Flores singulares, subsessiles, lobis perianthii late ovatis, 1.5 mm. longis, membranaceis, extus pilosis, marginibus ciliatis; stamina lobis perianthii duplo longiore.

Southeastern Yunnan: Fooning, Lungmai, alt. 1000 m., in bushes on rocky hill, small tree 8 m. high; *C. W. no. 89116* (type), May 3, 1940.

### 帽斗櫟 *Quercus pileata* Hu et Cheng, 新種。

灌木；小枝粗壯；圓柱形；有條紋，幼時有黃色星芒狀茸毛，最後幾無毛，紫黑色。葉革質，闊矩圓形倒卵形至卵形，頂端鈍，基部幾圓形，圓形至幾心形，全緣或生刺狀齒，上面幾無毛，下面密生黃色絨狀茸毛，長二·五至七公分，闊二至五·五公分；頂脈與側脈在上面凹陷，在下面凸起；側脈九至十對，互生或幾對生，常常分叉，引入齒，成六十至八十度角。皂斗單生，無柄，帽狀，邊緣外卷，直徑一·五公分，苞片多數，覆疊，頂端披針形，無毛，下部密生黃色茸毛。堅果卵圓形。基部疤痕小，凸起。小蕊花序下垂，長至七公分，花序柄與軸細瘦，有

黃色星芒狀茸毛；花單生，幾無柄，花被裂片卵圓形，長三公厘，外面有星芒狀毛，邊緣有纖毛；小蕊長約花被裂片之二倍。

雲南：大理，蒼山，海拔高二千七百至三千一百公尺，成叢薄，鄭萬鈞 11088 號（模式標本），一九四四年八月；德欽設治局，海拔高二千七百公尺，生山坡上；王啓無 70275 號，一九三五年九月；麗江，海拔高三千八百公尺，生山坡上；王啓無 71288 號，一九三五年七月。

此種與 *Quercus semicarpifolia* Sm. 近似，其不同處在其葉緣生有刺狀齒，與其帽狀皂斗邊緣外卷及有小緊密覆疊部部披針形之苞片。

### *Quercus pileata* Hu et Cheng, sp. nov.

Frutex; ramuli robusti, teretes, striati, juniores fulvo-stellato-tomentosi, demum glabrescentes, purpurino-nigri. Folia coriacea, late oblonga, obovata vel ovata, apice obtusa, basi subrotundata, rotundata vel subcordata, margine integra vel spinoso-dentata, supra glabrescentia, subtus dense fulvo-velutino-tomentosa, 2.5-7 cm. longa, 2-5.5 cm. lata; costa media supra impressa, subtus elevata; nervis lateralibus 9-10-jugis, alternatis vel suboppositis, saepe furcatis, ad marginem dentes inductis, sub angulo 60-80° divergentibus. Cupulae solitariae, sessiles, pileusiformes, ad marginem recurvae, 1.5 cm. in diametro, squamis numerosis imbricatis, apice lanceolatis glabris, cetera dense fulvo-tomentosis. Glandes ovoideae, cicastrice basilari parvae, convexae. Inflorescentia staminata pendula, ad 7 cm. longa, pedunculi rhachique graciles, fulvo-stellato-tomentosi. Flores singulares, subsessiles, lobis perianthii late ovatis, 3 mm. longis, extus stellato-pilosis, margine ciliatis; stamina lobis perianthii duplo longiore.

Western Yunnan: Tali, Tsangshan, alt. 2700-8100 m., forming thickets, W. C. Cheng no. 11088 (type), Aug. 1944; Atuntze, alt. 2700 m., on mountain slope, C. W. Wang 70275, Sept. 1935; Likang, alt. 3800 m., on mountain slope, C. W. Wang no. 71288, July, 1935.

This species is closely related to *Quercus semicarpifolia* Sm., differing in the densely spinoso-dentate leaves and in the cap-like cupules with recurved margins and small closely imbricate scales lanceolate at apex.

### 炭櫸 *Quercus utilis* Hu et Cheng, 新種。

常綠喬木，高至十公尺，幹直徑三十公分；樹皮石灰白色；小枝細瘦，圓柱形，有條紋，幼時有極稀星芒狀細絨毛，老時幾無毛，石灰白色。葉薄革質，卵形，橢圓披針形，披針形至倒卵形，頂端微鈍或銳尖，基部楔形，邊緣有腺狀齒牙狀小鋸齒，上面亮綠色，微有星芒狀細茸毛，下面沿中脈色淡，微有星芒狀茸毛，他部分有毛，綠色，長二·五至五·五公分，闊一·五至二·五公分，中脈在兩面均凸起；側脈九至十一對，細瘦，在上面凹陷，在下面凸起，直或微彎，引入齒，成六十至七十度角。葉柄細瘦，扁平，上面有星芒狀茸毛，下面幾無毛，長五公厘；托葉分離，宿存，披針形，長六公厘，皂斗半球形，直徑七公厘，苞片微小，覆瓦狀緊貼，卵形，尖頭，密生黃色茸毛。堅果卵矩圓形，長漸尖頭，有花柱三，開張，堅果頂端有絲狀毛，其他部分無毛，淡亮褐色，長十公厘，直徑七公厘，有一甚小凸出基部凹陷疤痕。

雲南東南部：西嚨縣，長箐，海拔高一千公尺，散生山坡上，喬木高十公尺，樹皮石灰白色，在當地常見，木用以燒炭及製杵；王啓無 81298 號（模式標本），一九三九年十一月七日；麻栗坡，海拔高一千三百至一千五百公尺，在石山上疏鬆叢薄中，灌木高四公尺，常見，馮



國栲 13501 號, 一九四七年十一月二十一日; 西嚮縣, 法斗, 海拔高一千五百公尺, 在石山上疏鬆叢林中, 灌木高五公尺, 常見, 馮國栲 12066 號, 一九四七年九月二十六日。

此種與 *Quercus phillyreoides* A. Gr. 相近似, 其不同處在其葉之邊緣有腺狀鋸齒及基部作楔形。

### *Quercus utilis* Hu et Cheng, sp. nov.

Arbor sempervirens, 10 m. alta, trunco 30 cm. in diametro, cortice calceo; ramuli graciles, teretes, striati, sparsissime stellato-tomentellati, juvenilibus glabrescentibus, vetutis calceis. Folia tenuiter coriacea, ovata, elliptico-lanceolata, lanceolata ad obovata, apice obtusiuscula vel acuta, basi cuneata, margine glanduloso-denticulata-serrulata, supra nitido-viridia, et sparse stellato-tomentellata, subtus in costa media pallide et sparsim stellato-tomentellata, ceterum sparsim pilosa, viridia, 2.5-5.5 cm. longa, 1.5-2.5 cm. lata, costa media utrinque elevata; nervis lateralibus utrinsecus 9-11-jugis, tenuibus, supra impressis, subtus elevatis, rectis et leviter arcuatis in dentes inductis, sub angulo  $60^{\circ}$ - $70^{\circ}$  divergentibus; petioli graciles, complanati, supra stellato-tomentosi, subtus glabrescentes, 5 mm. longi, stipulis liberis, persistentibus, lanceolatis, 6 mm. longis. Cupulae semiglobosae, 7 mm. in diametro, squamis minutis, imbricatis, appressis, ovatis, apiculatis, dense fulvo-tomentosis. Glandes ovoideo-oblongae, longe acuminatae, stylis 3, erecto-porrectis, apice sericeis, glabrae, pallide nitido-brunneae, 10 mm. longae, 7 mm. in diametro, cicatrice basilari minima, convexa.

Southeastern Yunnan: Sichour Hsien, Chanshing, alt. 1000 m., scattered on open slope, tree 10 m. high, bark chalky white, locally frequent; wood makes good charcoal and pestle, C. W. Wang no. 81298 (type), Nov. 7, 1939; Marlipo, Tungting, alt. 1300-1500 m., in open thickets on rocky hills, shrub 4 m. high, common, K. M. Feng no. 13501, nov. 21, 1947. Sichour Hsien, Faadoou, alt. 1500 m., in open thickets on rocky hills, shrub 5 m. high, common, K. M. Feng no. 12066, Sept. 26, 1947.

This species is allied to *Q. phillyreoides* A. Gr., differing in leaves being glandulose-serrate along the margins and cuneate at base.

### 木里櫟 *Quercus muliensis* Hu, 新種。

灌木高二·五公尺; 小枝圓柱狀, 有條紋, 密生黃灰色星芒狀茸毛。葉厚革質, 卵形, 倒卵形, 闊短圓形, 卵圓披針形至窄披針形, 頂端微鈍或有芒尖, 基部圓形至心狀形, 邊緣顯著外卷, 上面有稀疏星芒狀毛, 下面有極密生黃褐色星芒狀茸毛, 長一至二·五公分, 闊五至十三公厘; 中脈在上面凹陷, 在下面凸起; 側脈五至八對, 粗壯, 互生或幾對生, 近邊緣處常分叉, 環結, 在上面凹陷, 在下面凸起, 成六十至七十度角。葉柄粗壯, 長一·五至三公分。果斗無柄, 扁半球形, 直徑一公分, 鱗片極小, 覆瓦狀緊貼, 卵形, 有尖頭, 密生黃褐色茸毛。堅果扁半球形, 頂端凹陷有突起, 密生黃褐色茸毛, 淡栗褐色。

雲南北部: 木里南部, 海拔高二千五百公尺, 生於冷杉林中, 灌木高八英尺, 俞德浚 7254 號 (模式標本), 一九三七年七月五日。

此種小櫟與他種不同處在其極小厚革質葉多少呈短圓形, 邊緣顯著外卷, 下面有密生星芒狀茸毛。



***Quercus muliensis* Hu, sp. nov.**

Frutex 2.5 m. altus; ramuli teretes, striati, dense fulvo-cinereo-stellato-tomentosi. Folia crasse coriacea, ovata, obovata, late oblonga, anguste oblonga, ovato-lanceolata vel anguste lanceolata, apice obtusiuscula vel aristato-acuminata, basi rotundata vel cordata, margine valide revoluta, supra sparse pilosa, subtus densissime fulvo-stellato-tomentosa, 1-2.5 cm. longa, 5-13 mm. lata; costa media supra impressa, subtus elevata; nervis lateralibus utrinsecus 5-8-jugis, crassis, alternatis vel suboppositis, ad marginem saepe furcatis et anastomosantibus, supra impressis, subtus elevatis, sub angulo 60°-70° divergentibus; petioli validi, 1.5-3 mm. longi. Cupulae sessiles, depresso semiglobosae, 1 cm. in diametro, squamis minutis, imbricatis, ovatis, apiculatis, dense fulvo-tomentosis. Glandes immaturae depresso subglobosae, apice depressae umbonatae, dense fulvo-pilosae, pallide castaneo-brunnae.

Northern Yunnan: Southern Muli, Ko-pa-tan, alt. 2500 m., under *Abies* woods, shrub 8 ft., T. T. Yü no. 7254 (type), July 5, 1937.

This small leaved new species differs from others in its exceedingly small thick coriaceous more or less oblong leaves strongly revolute at the margins and thickly stellate-tomentose beneath.

**長柄櫸 *Quercus longipes* Hu, 新種。**

常綠喬木高二十公尺，樹幹直徑四十五公分；小枝極細瘦，圓柱形，有槽，微有毛，紫黑色；芽甚小，卵圓形，鈍頭，有數重疊卵形鈍鱗片。葉薄革質，矩圓形至倒卵矩圓形，頂端長尾狀漸尖，基部甚不等或幾不等闊楔形或圓形，邊緣有芒尖齒狀鋸齒，微向外卷，近基部全緣，上面亮綠色無毛，下面有白霜及平貼毛，長十至十二·五公分，闊三·五至四·五公分；中脈在上面凹陷，在下面顯著；側脈十二至十三對，距離不等，有時分叉，直，近邊緣處微彎，引入齒，成四十五至六十度角；小脈極細，但在兩面皆可見，成密集橫紋狀；葉柄極細，長二·五至三·五公分，無毛。大蕊花序長三公分，花序柄與軸甚細，有細毛。皂斗單生，無柄，相距遠，有極小緊密覆疊苞片，大蕊花單生皂斗中，花柱二至三，外卷。

雲南南部：富寧縣，架街，海拔高七百公尺，在有樹木谷中，喬木高二十公尺，直徑四十五公分，王啓無 89409 號（模式標本），一九四〇年五月二十；富寧縣，龍邁，高一千一百尺處，生石山上，大喬木高二十公尺，直徑四十公分，偶見，王啓無 89165 號，一九四〇年五月三日。

此種與他種不同處在其薄革質葉有葉柄長至三·五公分。

***Quercus longipes* Hu, sp. nov.**

Arbor sempervirens, 20 m. alta, trunco 45 cm. in diametro; ramuli gracillimi, teretes, canaliculati, sparsim pilosi, purpurino-nigri; gemmae parvulae, ovoideae, obtusae, perulis nonnullis imbricatis ovatis obtusis instructi. Folia tenuiter coriacea, oblonga, obovato-oblonga vel anguste elliptica, apice longe caudato-acuminata, basi valde inaequaliter vel subaequaliter cuneata vel rotundata, margine parte inferiore excepte remote mucronato-dentato-serrata et leviter revoluta, supra nitido-viridia, glabra, subtus glauca et pubescentes, 10-12.5 cm. longa, 3.5-4.5 cm. lata; costa media supra impressa, subtus prominente; nervis lateralibus utrinsecus 12-13-jugis, spatii irregularibus, interdum furcatis, rectis et leviter arcuatis in dentes ad marginem inductis, sub angulo

45°-60° divergentibus; nervulis tenuissimis sed utrinque distinctis, confertissimis, trabeculatis; petioli gracillimi, 2.5-3.5 cm. longi, glabri. Amenta pistillata 3 cm. longa, pedunculo rhachique gracillimis, pilosulosi. Cupulae solitariae, sessiles, distantes, squamis minutis, latis, proxime imbricatis; flore pistillato in quoque cupula solitario, stylis 2-3, recurvis.

Southern Yunnan: Fooning Hsien, Chachai, alt. 700 m., in wooded valley, tree to 20 m. high, 45 cm. in diam., *C. W. Wang* no. 89409 (type) May 20, 1940.

This species differs from others in the thin coriaceous leaves with very slender petioles to 3.5 long.

**黑脈糖 *Cyclobalanopsis nigrinervis* Hu, 新種。**

喬木高二十公尺；樹幹直徑五十公分；小枝粗壯，多稜，有黃色茸毛，最後無毛，紫黑色，有散生隆起幾圓形或矩圓形皮孔；芽圓形，被有數個覆疊卵形鈍頭有茸毛鱗片。葉革質，卵橢圓形，橢圓形或矩圓形，頂端漸尖，基部微斜圓或楔形，邊緣有厚尖齒牙狀鋸齒，上面暗綠色，無毛，下面密被黃褐色絨狀茸毛；惟其黑色中脈與側側無毛，長十六至二十四公分，闊七至九公分，側脈十六至二十二對，在上面凹陷，在下面凸起，微彎，引入齒；小脈在上邊凹陷，在下面可見；葉柄粗壯，長三四公分，無毛。大蕊花序長三至四公分，花序柄與軸粗壯，有黃褐色茸毛，被有散生皮孔；皂斗單生，無柄，有黃褐色茸毛，苞片連合成數層環狀有不規則之齒之片；大蕊花較皂斗為長，花柱有茸毛。

雲南西部：龍陵縣，小黑山，海拔高二千二百公尺，在有樹木山谷中，喬木高二十公尺，王啓無 89830 號，（模式標本），一九四一年七月二十八日。

此種與他種不同處，在其暗綠色革質葉，在上面無毛，在下面有黃色絨狀茸毛，及其變為黑色之側脈。

***Cyclobalanopsis nigrinervis* Hu, sp. nov.**

Arbor 20 m. alta; trunco 50 cm. in diam.; ramuli robusti, angulares, fulvo-tomentosi, demum glabrescentes, purpurino-nigri, lenticellis sparsis, prominentibus, subrotundatis vel oblongis instructi. Gemmae rotundatae, perulis nonnullis imbricatis ovatis obtusis tomentosis cinctae. Folia coriacea, ovato-elliptica, elliptica vel oblonga, apice acuminata, basi leviter oblique rotundata vel cuneata, margine callosa-dentata-serrata, supra obscure viridia glabra, subtus costa et nervis lateralibus glabris nigris exceptis dense fulvo-velutino-tomentosa, 16-24 cm. longa, 7-9 cm. lata, costa media valida, supra impressa, subtus prominente, nervis lateralibus 19-22-jugis, supra impressis, subtus elevatis, curvatis in dentes ad marginem inductis, nervulis supra impressis, subtus spectabilibus; petioli validi, 3-4 cm. longi, glabri. Inflorescentia feminea 3-4 cm. longa, pedunculo rhachique validis, fusco-tomentosis, lenticellis sparsis instructis; cupulae solitariae, sessiles, fulvo-tomentosae, squamis in laminas nonnullas annulares concentricas irregulariter dentatas connatis; flores feminei juveniles cupulas superantes, stylis tomentosis.

Western Yunnan: Lungling Hsien, Little Black Mountain, alt. 2500 m., in wooded valley, tree 20 m., *C. W. Wang*, no. 89830 (type), July 28, 1941.

This species differs from others in the dark green coriaceous leaves glabrescent above and yellowish velutinous-tomentellate except along the veins beneath and by the lateral veins turning black when dry.

**滇南櫸 *Cyclobalanopsis austro-yunnanensis* Hu, 新種。**

常綠喬木高至二十公尺；樹皮灰色；小枝粗壯，圓柱狀，有條紋，微有毛，灰紫色，被有多數極微小圓形皮孔。葉革質，橢圓披針形，頂端漸尖，基部楔形，邊緣全緣微外卷，在上面亮綠色，在下面淡綠色，微有毛，長二十至二十七公分，闊六至八公分，中脈在兩面均凸起，側脈九至十對，互生至幾對生，弓彎在邊緣環結，相距至二·五公分，成四十五至六十度角；小脈細，密集，在兩面均可見；葉柄粗壯，上面扁平，微有槽，微有毛，長四公分。皂斗杯狀，高二公分，直徑二公分，裏面外面均有銹色茸毛，包裹堅果二分之一，苞片連合成數環狀片。堅果骨質，倒卵短圓形，尖頭，有銹色茸毛，有條紋，赤褐色，長三·五公分，闊二公分，基部疤痕凸出，直徑一·五公分。

雲南東南部：西嘯縣，聽漫海拔高一千三百至一千五百公尺，生混合林中，喬木高二十公尺，樹皮灰色，稀見，馮國權 12387 號（模式標本），一九四七十月十二日。

此種似與 *Cyclobalanopsis tomentosi-cupula* Nakai 有關係，其不同處為其葉較大，其皂斗與果亦較大。

***Cyclobalanopsis austro-yunnanensis* Hu, sp. nov.**

Arbor sempervirens, ad 20 m. alta, cortice cinereo; ramuli robusti, teretes, striati, sparsim pilosi, griseolo-purpurei, lenticellis pluribus minutis prominentibus rotundatis instructi. Folia coriacea, elliptico-lanceolata, apice acuminata, basi cuneata, margine integra et leviter revoluta, supra nitido-viridia, subtus pallide viridia, sparsim pilosa, 20-27 cm. longa, 6-8 cm. lata, costa media utrinque elevata, nervis lateralibus utrinsecus 9-10-jugis, alternatis vel suboppositis, ad marginem camptodromis anastomosantibus, ad 2.5 cm. distantibus, sub angulo 45°-60° divergentibus, nervulis tenuibus, confertis utrinque spectabilibus; petioli validi, supra plani et leviter canaliculati, sparsim pilosi, 4 cm. longi. Cupulae cupulares, 2 cm. altae, 2 cm. in diametro, intus et extus ferrugineo-tomentosae, partem circiter 1/2 glandis amplexantes, squamis in laminas nonnullas annulares concentricas connatis. Glandes osseae, obovoideo-oblongae, apiculatae, ferrugineo-tomentosae, striatae, rufo-brunneae, 3.5 cm. longae, 2 cm. latae, cicatrice basilari convexa, 1.5 cm. in diametro.

Southeastern Yunnan: Sichour Hsien, Tingmann, alt. 1300-1500 m., in mixed forests, tree 20 m., bark gray, rare, K. M. Feng no. 12387 (type), Oct. 12, 1947.

This species is apparently related to *C. tomentosi-cupula* (Hay.) Nakai, differing in much larger leaves and much larger cupules and nuts.

**馮氏櫸 *Cyclobalanopsis Fengii* Hu et Cheng, 新種。**

常綠大喬木高至四十公尺，直徑二公尺；小枝粗壯，圓柱形，有條紋，幾無毛，灰黑色，被有微小高起幾圓形黑色皮孔。芽大，卵形，微鈍，長十三公厘，闊八公厘，有多數覆疊卵形鈍頭有灰色絲狀茸毛之鱗片。葉革質，矩圓形，卵圓矩圓形至窄矩圓形，頂端漸尖，基部楔形，邊緣有粗大有芒齒狀鋸齒，齒微彎，上面亮色，下面帶白霜，有細茸毛，長二十二至三十七公分，闊六·五至十三·五公分；中脈與側脈在上面凹陷，在下面凸起，微有毛；側脈二十二至三十對，直，微彎引入齒，相距六至十公厘；成四十五度角；小脈甚細，甚密，在兩面可見；葉柄粗壯，上面有槽，長二至三·五公分。皂斗幾圓形，高三·五公分，直徑四·五公分，有黃色茸毛，苞片連合成六環狀幾全緣片。堅果骨質，扁球形，頂有突起，有黃色茸毛，幾不高於皂斗。

雲南西北部：貢山縣，海拔高一千六百至一千七百公尺，喬木高七公尺，直徑三十公分，在谷中混合林中，常見，馮國楮 8102 號(模式標本)，一九四〇年十月；上帕，海拔高二千八百公尺，在森林中，喬木高四十公尺，直徑二公尺，蔡希陶 58792 號，一九三四年十月十三日。

此特殊種與 *Cyclobalanopsis rex* (Hemsl.) Schottky 有密切關係，其不同處在其較大之葉長至三十五公分邊緣有芒之粗齒狀鋸齒，與在其幾球形之皂斗高至三·五公分，直徑四·五公分，有六疏鬆環狀幾全緣有黃灰色茸毛片，與其黃灰色扁球形堅果幾不高出皂斗。

### *Cyclobalanopsis Fengii* Hu et Cheng, sp. nov.

Arbor magna, sempervirens, 40 m. alta, 2 m. in diametro; ramuli robusti, teretes, striati, glabrescentes, griseo-nigri, lenticellis minutis elevatis subrotundatis nigris instructi. Gemmae magnae, ovoideae, obtusiusculae, 13 mm. longae, 8 mm. latae, perulis pluribus imbricatis ovatis obtusis cinereo-sericeis tomentosis cinctae. Folia coriacea, oblonga, ovato-oblonga vel anguste oblonga, apice acuminata, basi cuneata, margine grosse setoso-dentato-serrata, dentibus leviter curvatis instructa, supra nitido-viridia, subtus glauca, tomentellata, 22-37 cm. longa, 6.5-13.5 cm. lata; costa media et nervis lateralibus supra impressis, subtus elevatis sparsim pilosis; nervis lateralibus 22-30-jugis, rectis, leviter arcuatis in dentes inductis, 6-10 mm. distantibus, sub angulo 45° divergentibus, nervulis tenuissimis, confertissimis, utrinque conspicuis; petioli validi supra canaliculati, 2-3.5 cm. longi. Cupulae subglobosae, 3.5 cm. altae, 4.5 cm. in diametro, fulvo-tomentosae, squamis in laminas 6 annulares concentricas subintegras connatis. Glans ossea, depresso-globosa, apice umbonata, fulvo-tomentosa, cupulam raro superans.

Northwestern Yunnan: Kungshan Hsien, alt. 1600-1700 m., tree 7 m., diam. 30 cm., in mixed forest in ravine, common, *K. M. Feng no. 8102* (type), Oct. 1940; Shangpa, alt. 2800 m., in forest, tree 40 m., diam. 12 m., *H. H. Tsai no. 58792*, Oct. 13, 1934.

This striking species is closely related to *C. rex* (Hemsl.) Schottky, differing in larger leaves to 37 cm. long, coarsely setose-dentate-serrate along the margins, and in the subglobose cupules to 3.5 cm. high and 4.5 cm. in diam. with 6 loose annular concentric subentire tawny-gray tomentose lamina and in the tawny-gray depressed-globose nut scarcely exceeding the cupule.

### 法斗櫟 *Cyclobalanopsis faadoouensis* Hu, 新種。

常綠喬木高十公尺；枝細瘦，圓柱形，有茸毛，最後有疏生毛，灰黑色，被有多數微小高起圓形氣孔。芽小，卵形，鈍頭，有多數覆疊鈍頭有細茸毛鱗片。葉革質，披針形，頂端長漸尖，基部楔形，邊緣全緣或微波狀，稀有極細齒，微外卷，上面亮綠色，幾無毛，下面木綠色，有細茸毛及稀疏長毛，長十至十八公分，闊三至四·五公分；中脈在上面微凸起，在下面顯著；側脈十一至十二對，相距甚遠，弓彎，近邊緣處環結，成四十五至六十度角；小脈細，密生，在兩面均可見；葉柄扁平，無毛，長三公分。皂斗無柄，杯狀，包裹堅果四分之一部，內部有黃絲狀毛，苞片連合成十一環狀有黃茸毛片，堅果幾球形，有尖頭，基部收縮，頂端有黃絲狀毛，其餘部分無毛，深亮栗褐色，高二公分，直徑一·七公分，基部疤痕凸出，直徑一公分。

雲南東南部：西嚙縣，法斗，海拔高一千四百至一千五百公尺，在小石山上混合林中，喬木高十公尺，稀見，馮國楮 12098 號(模式標本)，一九四七年九月二十九日。

***Cyclobalanopsis faadoouensis* Hu, sp. nov.**

Arbor sempervirens, 10 m. alta; ramuli graciles, teretes, tomentosi, demum sparsim pilosi, griseo-nigri, lenticellis pluribus minutis elevatis rotundatis instructi. Gemmae parvae, ovoideae, obtusae, perulis pluribus imbricatis obtusis tomentellatis cinctae. Folia coriacea, lanceolata, apice longe acuminata, basi cuneata, margine integra ad leviter undulata, raro minute denticulata et leviter revoluta, supra nitido-viridia, glabrescentia, subtus obscure viridia, tomentellata, sparsim longe pilosa, 10-18 cm. longa, 3-4.5 cm. lata; costa media supra leviter elevata, subtus prominente; nervis lateralibus 11-12-jugis, distantibus, ad marginem camptodromis, anastomosantibus, sub angulo  $45^{\circ}$ - $60^{\circ}$  divergentibus, nervulis tenuibus, confertis, utrinque conspicuis; petioli complanati, glabri, ad 3 cm. longi. Cupulae sessiles, cupulares, partem  $1/4$  glandis amplectentes, intus fulvo-sericeae, squamis in strata 11 concentrica laminarum fulvo-tomentosarum connatis. Glandes subgloboae, apiculatae, basi contractae, apice fulvo-sericeo-pilosae, ceterum glabra, obscure nitido-castaneo-brunneae, 2 cm. altae, 1.7 cm. in diametro, cicatrice basilari convexa, 1 cm. in diametro.

Southeastern Yunnan: Sichour Hsien, Faa-doou, alt. 1400-1500 m., in mixed forests on rocky hill, tree 10 m. high, rare, K. M. Feng no. 12098 (type), Sept. 29, 1947.

**圓櫸 *Cyclobalanopsis Koumeii* Hu, 新種。**

常綠喬木，高十三公尺；小枝細瘦，圓柱形，有條紋，無毛，葉薄革質，披針形至矩圓披針形，頂端漸尖，基部楔形或不等幾圓形，上半部或上部四分之一有鋸齒，兩面同色無毛，長十一至十六公分，闊二·五至四·五公分；中脈在兩面均微凸起；側脈十七至二十四對，互生或幾對生，弓彎，在邊緣環結且引入齒，成六十度角；小脈甚細而密，在兩面皆可見；葉柄細，上面有槽，無毛，長十至十五公厘；托葉線形，有黃色絲狀毛，長八公厘。大蕊花序長至九公厘；花序柄細，有黃色絲狀毛。幼果斗有二花，外面密生黃色毛；花柱二，開張，頂端棒狀。成熟果斗無柄，扁，包裹堅果之基部；苞片連合成七有小齒或幾全緣有黃色茸毛之片。堅果甚扁球形，有尖頭，有黃色絲球毛，深亮栗褐色，高九公厘，直徑九公厘，基部疤痕凹陷，直徑九公厘。

雲南東南部：西嚙縣，香屏山，海拔高一千六百至一千八百公尺，生混合林中，喬木十三公尺，常見，馮國楮 11560 號（模式標本），一九四七年九月二日；西嚙縣，法斗，海拔高一千四百五十至一千五百公尺，生小石山叢薄中，喬木高十二公尺，常見，馮國楮 11871 號，一九四七年九月十八日。

此種與其他梟果種不同處在其長披針形葉。

***Cyclobalanopsis Koumeii* Hu, sp. nov.**

Arbor sempervirens ad 13 m. alta; ramuli graciles, teretes, striati, glabri. Folia tenuiter coriacea, lanceolata ad oblongo-lanceolata, apice acuminata, basi cuneata ad inaequaliter subrotundata, dimidio superiore vel quadrante superiore serrata, utrinque glabra et concolora, 11-16 cm. longa, 2.5-4.5 cm. lata, costa media utrinque leviter elevata, nervis lateralibus tenuibus, utrinsecus 17-24-jugis, alternatis vel suboppositis, camptodromis et anastomosantibus in dentes ad marginem inductis, sub angulo  $60^{\circ}$  divergentibus; nervulis tenuissimis, confertissimis, utrinque conspicuis; petioli graciles, supra canaliculati, glabri, 10-15 mm. longi, stipulis linearibus, fulvo-sericeis, 8 mm. longis-

Inflorescentia feminea ad 9 mm. longa, pedunculo gracili, fulvo-sericeo. Cupulae juvenales cum floribus 2, extus dense fulvo-pilosae, stylis 2, divergentibus, apice clavatis. Cupula matura sessilis, complanata, basin glandis amplexans, squamis in strata 7 concentrica laminarum fusco-tomentosarum denticularum ad subintegrarum conatis. Glandes multissime depresso-globosae, apiculatae, fulvo-sericeae, obscure nitide castaneo-brunneae, 9 mm. altae, 19 mm. in diametro, cicatrice basilari concava, 9 mm. in diametro.

Southeastern Yunnan: Sichour Hsien, Shiangpyng Shan, alt. 1600-1800 m., in mixed forests, tree 13 m. high, common, *K. M. Feng no. 11560* (type), Sept. 2, 1947; Sichour Hsien, Faadoou, alt. 140-1500 m., in open thickets on rocky hill, tree 12 m. high; common, *K. M. Feng no. 11871*, Sept. 18, 1947.

This species differs from other flat-fruited species in the long lanceolate leaves.

### 西嚙櫟 *Cyclobalanopsis sichourensis* Hu, 新種。

常綠喬木，高至二十公尺；小枝粗壯，圓柱形，有條紋，微有毛，紫黑色，被有頗大高起圓形白色皮孔。芽卵圓形，鈍頭有多數覆疊卵形鈍頭有細茸毛與纖毛苞片。葉革質，卵矩圓形至倒卵橢圓形，頂端驟尖，基部圓或楔形，上部四分之一有粗大胼胝齒狀鋸齒，下部全緣向外微卷，上面亮綠色，幾無毛，下面木綠色，有稀疏毛，葉脈腋間有鬚狀毛；長十六至二十一公分，闊六至九公分；中脈在上面凹陷，在下面粗壯；側脈十五至十八對，互生或幾對生，在上部弓彎引入齒，在下部近邊緣處環結，成四十五至六十度角；小脈甚細而密，在兩面均可見；葉柄頗粗壯，長三·五公分，有疏毛。皂斗扁，幾球形，除頂端外，完全將堅果包圍，高二·五公分，直徑四·五公分，壁頗薄，外面有黃色茸毛，裏面密被黃色絲狀茸毛，苞片連成十環狀波狀片。堅果扁球形，頂端凹陷有尖頭，高二公分，直徑四公分，有黃色絲狀茸毛，栗褐色；基部疤痕凸起，與堅果同大。

雲南東南部：西嚙縣，聽漫，海拔高一千三百至一千五百公尺，生混合林中，喬木高二十公尺，常見，馮國楮 12384 號（模式標本），一九四七年十月十二日。

此種與 *Cyclobalanopsis rex* Schottky 相近似，其不同處在其卵矩圓形至倒卵橢圓形之葉下面不帶白霜，與其扁球形皂斗完全包圍其堅果，與其堅果具有凸起基部疤痕與堅果等大。

### *Cyclobalanopsis sichourensis* Hu, sp. nov.

Arbor sempervirens, ad 20 m. alta; ramuli robusti, teretes, striati, sparsim pilosi, purpureo-nigri, lenticellis satis magnis elevatis rotundatis albis instructi. Gemmae ovoideae, obtusae, perulis pluribus imbricatis ovatis obtusis tomentellatis ciliatis cinctae. Folia coriacea, ovato-oblonga ad obovato-elliptica, apice cuspidata, basi rotundata ad cuneata, quadrante superiore grosse callosa-dentato-serrata, inferne integra et leviter revoluta, supra nitido-viridia et glabrescentia, subtus obscure viridia sparsim pilosa et in axillis nervorum barbata, 16-21 cm. longa, 6-9 cm. lata; costa media supra impressa subtus validissima; nervis lateralibus utrinsecus 15-18 jugis, alternatis vel suboppositis, camptodromis, superne in dentes inductis, margine inferne anastomosantibus, sub angulo 45°-60° divergentibus; nervulis tenuibus, confertis, utrinque conspicuis; petioli satis validi, 3.5 cm. longi, sparsim pilosi. Cupulae depressae, subglobosae, apice excepto

glandem omnem amplexentes, 2.5 cm. altae, 4.5 cm. in diametro; murus satis tenuis, extus fulvo-tomentosus, intus dense fulvo-sericeo-tomentosus, squamis in laminas 10 annulares concentricas undulatas connatis. Glandes depressae globosae, apice depressae et apiculatae, 2 cm. altae, 4 cm. in diametro, fusco-sericeo-tomentosae, castaneo-brunneae, cicatrice basilari convexa, diametrom glandis aequanti.

Southeastern Yunnan: Sichour Hsien, Ting Mann, alt. 1300-1500 m. in mixed forests, tree 20 m., common, *K. M. Feng no. 12384* (type), Oct. 12, 1947.

This species is closely related to *C. rex* (Hemsl.) Schottky, differing in ovate-oblong to obovate-elliptic leaves not glaucous beneath and in the depressed-globose cupules completely enclosing the nuts and in the nut with convex basal scar as large as the nut.

### 香屏櫸 *Cyclobalanopsis shiangpyngensis* Hu, 新種。

常綠喬木高十公尺；小枝細瘦，圓柱形，有條紋，赤褐色，幾無毛。葉革質，披針形至橢圓披針形，頂端漸尖，基部楔形有時不等，除基部外邊緣有圓鋸齒，長八·五至十四公分，闊三至四公分，上面幾無毛，下面微有毛；中脈在兩面均凸起；側脈互生或幾對生，十一至十六對，弓彎，在邊緣環結引入齒，成四十至五十度角；小脈甚細，在兩面均可見，成密細橫紋；葉柄細瘦，上面有槽，無毛，長一·五至二·五公分，幼嫩皂斗陀螺形，幾完全將堅果包裹，苞片連成九環狀片，下部者有鋸齒，上部者幾全緣，外面有黃色茸毛，幼嫩堅果闊圓錐狀幾球形，有突起，有絲狀毛，有一大凸起基部疤痕。

雲南東南部：西畴縣，香屏山，海拔高一千五百至一千八百公尺，生混合林中，喬木高十公尺，常見；馮國楨 11541 號（模式標本），一九四七年九月。

此種與 *Cyclobalanopsis Blakei* 相近似，不同處在葉下面有毛，葉柄較長，皂斗下部之環狀片有顯處之齒。

### *Cyclobalanopsis shiangpyngensis* Hu, sp. nov.

Arbor sempervirens, 10 m. alta; ramuli graciles, teretes, striati, rufo-brunnei, glabrescentes. Folia coriacea, lanceolata ad elliptico-lanceolata, apice acuminata, basi cuneata, interdum inaequantia, margine parte inferiore excepta crenata, 8.5-14 cm. lata, supra glabra, subtus sparsim pilosa; costa media utrinque elevata; nervis lateralibus alternatis vel suboppositis, utrisque 11-16-jugis, camptodromis et anastomosantibus in dentes inductis, sub angulo 40°-45° divergentibus, nervulis tenuissimis, utrinque conspicuis, confertissimis, tenuiter trabeculatis; petioli graciles supra canaliculati, glabri, 1.5-2.5 cm. longi. Cupulae juveniles turbinatae, glandes fere omnes amplexentes, squamis in lamellis circa 9 horizontales concentricas formati, inferioribus dentatis, superioribus subintegris, extus fulvo-tomentosis. Glandes juveniles late conico-subglobosae, umbonatae, sericeae, cicatrice basilari magna, convexa.

This species is closely allied to *C. Blakei* differing in leaves being pilose beneath and with longer petioles, and in cupules with lower lamellas of bracts prominently dentate.

### 櫟果黑 *Cyclobalanopsis nigrinux* Hu, 新種。

常綠喬木，高十公尺；小枝細瘦，圓柱形，有條紋，無毛，灰黑色。葉薄革質，橢圓形，倒卵橢圓形至窄橢圓形，頂端長尾狀漸尖至鑷形長尾狀漸尖，基部楔形，邊緣上部有疏遠小圓齒，



下部全緣，長六至十一公分，闊二·五至三·五公分，兩面均無毛，上面亮綠色，下面綠色；中脈在上面凹陷，在下面凸起；側脈十至十一對，互生或幾對生，近邊緣處弓彎環結引入齒，成六十度角；小脈極細，在兩面均可見，成密細橫紋；葉柄細瘦長五至十五公厘。皂斗無柄，杯狀，高一公分，直徑一·五公分，苞片連成七橫列環狀有齒片，外面微有毛。幼堅果幾圓形，有尖頭，亮黑色，微有毛，基部疤痕扁平，直徑五公厘。

雲南東南部，西畴縣，法斗，海拔高一千五百至一千六百公尺。生混合林中，喬木高十公尺，常見；馮國楮 11904 號(模式標本)，一九四七年九月十九日。

此種與他種不同處在其薄革質橢圓形葉頂端長尾狀漸尖，及其亮黑色堅果。

### *Cyclobalanopsis nigrinux* Hu, sp. nov.

Arbor sempervirens 10 m. alta; ramuli graciles, teretes, striati, glabri, cinereo-nigri. Folia tenuiter coriacea, elliptica, obovato-elliptica vel anguste elliptica, apice caudato-acuminata vel falcato-caudato-acuminata, basi cuneata, margine parte superiore remote crenato-denticulata, 6-11 cm. longa, 2.5-3.5 cm. lata, utrinque glabra, supra nitide viridia, subtus viridia; costa media supra impressa, subtus elevata; nervis lateralibus utrinsecus 10-11-jugis, alternatis vel suboppositis, ad marginem camptodromis et anastomosantibus in dentes inductis, sub angulo 60° divergentibus; nervulis tenuissimis, utrinque conspicuis, confertissimis, trabeculatis; petioli graciles, 5-15 mm. longis. Cupulae sessiles, cupulares, 1 cm. altae, 1.5 cm. in diametro, squamis in lamellas circa 7 horizontales annulares concentricas dentatas formatis, extus sparse pilosis. Glandes juveniles subglobosae, apiculatae, nitide nigrae, sparse pilosae, cicastrice basilari plani, 5 mm. in diametro.

Southeastern Yunnan: Sichour Hsien, Faadoou, alt. 1500-1600 m., in mixed forests, tree 10 m., common; K. M. Feng no. 11904 (type), Sept. 19, 1947.

This species differs from others in the rather small thin coriaceous elliptical leaves caudato-acuminate at apex, and in the characteristic shiny black young nuts.

### 龍連櫟 *Cyclobalanopsis lungmaiensis* Hu, 新種。

常綠喬木，高二十公尺，樹幹直徑四十公分；小枝頗粗壯，有顯著溝槽，幾無毛，紫黑色；芽甚小，卵圓狀，鈍頭，鱗片覆疊，長尾狀卵圓狀，密生茸毛與長毛。葉薄革質，矩圓形，倒卵矩圓形，窄矩圓形至窄橢圓形，頂端尾狀漸尖，基部闊楔形至幾圓形，邊緣除下部外有芒狀鋸齒，兩面均無毛，上面亮暗綠色，下面淡綠色，長九·五至十一·五公分，闊三至四公分；中脈在上面凹陷，在下面凸起；側脈十三四對，細，上面可見，下面凸起，直而在邊緣微彎引入齒，成四十五度角；小脈極細，在兩面皆可見，密集成橫紋；葉柄細瘦，長二至二·五公分，上面有槽無毛，大蕊花序長二·五公分，花序柄與軸極細瘦，有細毛。皂斗單生，無柄，相距遠，苞片連合成橫列環狀波狀密生黃色茸毛之片；大蕊花單生皂斗中，花柱二至三，開張，向外卷，頭狀。

雲南東南部：富寧縣，龍邁，海拔高一千一百公尺，生石山上，大喬木高二十公尺，直徑四十公分，偶見；王啓無 89165 號(模式標本)，一九四〇年五月三日。

此種與他種不同處在其矩圓形有芒狀鋸齒及長至二公分之葉柄之葉。

### *Cyclobalanopsis lungmaiensis* Hu, sp. nov.

Arbor sempervirens, 20 m. alta, trunco 40 cm. in diametro; ramuli satis validi, prominente canaliculati, glabrescentes, purpurino-nigri; gemmae parvulae, ovoideae,

obtusae, perulis imbricatis ovatis longe caudatis dense tomentosis et longe pilosis instructi. Folia tenuiter coriacea, oblonga, obovato-oblonga, anguste oblonga vel anguste elliptica, apice caudato-acuminata, basi late cuneata vel subrotundata, margine parte inferiore excepte aristo-serrata, utrinque glabra, supra nitide atro-viridia, subtus pallide viridia, 9.5-11.5 cm. longa, 3-4 cm. lata; costa media siupra impressa, subtus elevata, nervis lateralibus 13-14-jugis, supra conspicuis, subtus elevatis, rectis et ad marginem leviter arcuatis in dentes inductis, sub angulo  $45^{\circ}$  divergentibus; nervulis tenuissimis sed utrinque distinctis, confertissimis, trabeculatis; petioli graciles, 2-2.5 cm. longi, supra canaliculati, glabri. Amenta pistillata 2.5-2.5 cm. longi, supra canaliculati, glabri. Amenta pistillata 2.5 cm. longi, pedunculo rhachique gracillimis, pilosulosi. Cupulae solitariae, sessiles, distantes, squamis in laminas annulares concentricas undulatas connatis, dense fulvo-tomentosis; flore pistillato in quoque cupula solitario, stylis 2-3, divergentibus, recurvis, capitatis.

Southeastern Yunnan: Fooning Hsien, Lungmai, alt. 1100 m., rocky Hill, large tree 20 m., 40 cm. in diam., occasional; *C. W. Wang no. 89615* (type); May 3, 1940.

This species differs from others in the oblong aristate-serrate leaves with slender petiole to 2.5 cm. long.